AMENDED CLAIMS

[received by the International Bureau on 17 November 2003 (17.11.03);
original claims 1-20 replaced by new claims 1-32 (3 pages)]

1. An isolated nucleic acid which encodes an *Aequorea coerulescens* peptide, selected from:

(a) a nucleic acid which encodes a protein comprising an amino acid sequence SEQ ID NO: 02;

(b) a nucleic acid comprising a nucleotide sequence SEQ ID NO: 01.

2. An isolated nucleic acid selected from the group consisting of:

(a) a nucleic acid derived from the nucleic acid of claim 1 using at least one of site-directed mutagenesis and/or random mutagenesis;

(b) a nucleic acid coding for an amino acid sequence selected from SEQ ID NOs: 04, 06, 08, 10, 12, 14, 16, 18, 20, 22, or 24; or

(c) a nucleic acid comprising a nucleotide sequence selected from SEQ ID NOs: 03, 05, 07, 09, 11, 13, 15, 17, 19, 21, or 23.

(d) a nucleic acid differing from the nucleic acid of (a) above due to degeneracy of the genetic code

3. An isolated nucleic acid of claim 2, wherein said nucleic acid encodes a fluorescent protein

4. An expression cassette comprising

(a) the nucleic acid of claim 2; and

(b) regulatory elements necessary for expression of the nucleic acid in the cell.

5. An expression cassette comprising

(a) the nucleic acid of claim 3; and

(b) regulatory elements necessary for expression of the nucleic acid in the cell.

6. A cell, or progeny thereof, comprising the expression cassette of

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claim 4.

7. A cell, or progeny thereof, comprising the expression cassette of claim 5.

8. An isolated peptide encoded by the nucleic acid of claim 2.

9. An antibody binding specifically to the peptide of claim 8.

10. A fusion peptide incorporating the peptide of claim 8.

11. A transgenic organism capable of expressing the peptide of claim 8.

12. A method for labeling or detecting a biological molecule comprising coupling said biological molecule to the peptide of claim 8.

13. A method for labeling or detecting a cell or cell organelle comprising production of the peptide of claim 8 in the cell.

14. A method for detecting a gene expression comprising production of the peptide of claim 8 in the cell.

15. An isolated peptide encoded by the nucleic acid of claim 3.

16. An antibody binding specifically to the peptide of claim 15.

17. A fusion peptide incorporating the peptide of claim 15.

18. A transgenic organism capable of expressing the peptide of claim 15.

19. A method for labeling or detecting a biological molecule comprising coupling said biological molecule to the peptide of claim 15.

20. A method for labeling or detecting a cell or cell organelle comprising production of the peptide of claim 15 in the cell.

21. A method for detecting a gene expression comprising production of the peptide of claim 15 in the cell.

22. A nucleic acid fragment, wherein said fragment is selected from the group consisting of:

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(a) a fragment encoding a peptide of at least 100 amino acid residues in length from SEQ ID NOs: 02, 04, 06, 08, 10, 12, 14, 16, 18, 20, 22, or 24; or

(b) a fragment substantially similar or identical to a nucleotide sequence of at least 300 residues in length from SEQ ID NO: 01, 03, 05, 07, 09, 11, 13, 15, 17, 19, 21, or 23.

23. A nucleic acid molecule comprising a nucleic acid fragment of claim 22, wherein the nucleic acid encodes a fluorescent protein

24. An expression cassette comprising

(a) the nucleic acid molecule of claim 23; and

(b) regulatory elements necessary for expression of the nucleic acid fragment in the cell.

25. A cell, or progeny thereof, comprising the expression cassette of claim 24.

26. An isolated peptide encoded by the nucleic acid fragment of claim 23.

27. An antibody binding specifically to the peptide of claim 26.

28. A fusion peptide incorporating the peptide of claim 26.

29. A transgenic organism capable of expressing the peptide of claim 26.

30. A method for labeling or detecting a biological molecule comprising coupling said biological molecule to the peptide claim 26.

31. A method for labeling or detecting a cell or cell organelle comprising production of the peptide of claim 26 in the cell.

32. A method for detecting a gene expression comprising production of the peptide of claim 26 in a cell.